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Yury Prilutsky

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05/08/2009

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EXAMINER

QUIETT, CARRAMAH J

ART UNIT

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2622

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DELIVERY MODE

05/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/773,092	Applicant(s) PRILUTSKY ET AL.	
	Examiner Carramah J. Quiett	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32, 57-85 and 89-104 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32, 57-85 and 89-104 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment(s), filed on 02/17/2009, have been entered and made of record. Claims 1-32, 57-85 and 89-104 are pending.

Response to Arguments

2. Applicant's arguments filed 02/17/2009 have been fully considered but they are not persuasive.

The Applicants assert that Benati et al. as modified by Malloy Desormeaux, does not teach or suggest an “analysis of a subsample representation of selected regions of a digital image, where the subsample representation includes an eye region” (Remarks 02/17/2009). The Examiner respectfully disagrees. Figures 2-4 of Benati et al. as modified by Malloy Desormeaux teach an analysis of the subsample representation of selected regions of the digital image, wherein the subsample representation comprises an eye region suspected as indicative of red eye (col. 5, lines 27-36). In Benati et al., please read col. 3, lines 46-62; col. 4, lines 17-45 col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15. Also, for pre-capture image, please read Malloy Desormeaux col. 16, line 48 -- col. 17, line 35. Accordingly, the Examiner maintains the rejections to claims 1-32, 57-85 and 89-104.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1-27, 30-32, 57-77, 80-85, and 89-104** are rejected under 35 U.S.C. 103(a) as being unpatentable over Benati et al. (U.S. Pat. #5748764) in view of Malloy Desormeaux (U.S. Pat. #6,501,911).

For **claim 1**, Benati discloses a digital apparatus comprising a red-eye filter for modifying an area within a digital image indicative of a red-eye phenomenon based on an analysis of a subsample representation of selected regions of said digital image, wherein the subsample representation comprises an eye region suspected as indicative of red eye (col. 5, lines 27-36), and wherein a degree of said subsampling is based on a complexity of calculation of the red-eye filter (col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15) and on an analysis of meta-data (bit map) information (figs. 2-4; col. 3, lines 46-62; col. 4, lines 17-45). However, Benati does not expressly disclose subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image.

In a similar field of endeavor, Malloy Desormeaux discloses subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image (col. 16, line 48 -- col. 17, line 35). In light of the teaching of Malloy Desormeaux, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus with subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image in order to adjust the brightness of the image (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 2**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein the analysis is performed at least in part for determining said area (col. 3, line 63 – col. 4, line 16).

For **claim 3**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein the analysis is performed at least in part for determining said modifying (col. 3, line 63 – col. 4, line 16).

For **claim 4**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said selected regions of said digitized image comprise the entire image (col. 3, lines 24-45).

For **claim 5**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said selected regions of said digitized image comprise multi resolution encoding of said image (col. 7, lines 8-35). Also, see fig. 4.

For **claim 6**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein at least one region of the entire image is not included among said selected regions of said image (col. 3, line 63 – col. 4, line 16; col. 4, line 51 – col. 5, line 21).

For **claim 7**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said analysis is performed in part on a full resolution image and in part on a subsample resolution of said digital image (col. 7, lines 8-35). Also, see fig. 4.

For **claim 8**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, further comprising a module for changing the degree of said subsampling (col. 4, line 51 – col. 5, line 21).

For **claim 9**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said changing the degree of said subsampling is determined empirically (col. 4, lines 6-16).

For **claim 10**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said changing the degree of said subsampling is determined based on a size of said image (col. 7, lines 8-35).

For **claim 11**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said changing the degree of said subsampling is determined based on a size of selected regions of the image (col. 7, lines 8-35).

For **claim 12**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said changing the degree of said subsampling is determined based on data obtained from the camera relating to the settings of the camera at the time of image capture (figs. 2-4; col. 3, lines 24-62; col. 4, lines 17-45).

For **claim 13**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 12, wherein the data obtained from the camera includes an aperture setting or focus of the camera, or both (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 14**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 12, wherein the data obtained from the camera includes the distance of the subject from the camera (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 15**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said changing the degree of said subsampling is determined based on digitized image metadata (bit map) information (col. 4, lines 17-45).

For **claim 16**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said modifying the area is performed including the full resolution of said digital image (col. 7, lines 8-35).

For **claim 17**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 8, wherein said red-eye filter comprises of a plurality of sub filters (fig. 2, col. 3, lines 46-62).

For **claim 18**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 17, wherein said subsampling for said sub filters operating on selected regions of said image is determined by one or more of the image size (fig. 2, col. 3, lines 46-62; col. 7, lines 8-35), suspected as red eye region size (col. 3, line 63 – col. 4, line 16; col. 4, line 51 – col. 5, line 21), filter computation complexity (col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15), empirical success rate of said sub filter (col. 4, lines 6-16), empirical false detection rate of said sub filter (col. 3, line 63 – col. 4, line 16; col. 4, line 51 – col. 5, line 21), falsing probability of said sub filter (col. 3, line 63 – col. 4, line 16; col. 4, line 51 – col. 5, line 21), relations between said suspected regions as red eye, results of previous analysis of other said sub filters (col. 5, line 38 – col. 6, line 15).

For **claim 19**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, further comprising memory for saving said digitized image after applying said filter for modifying pixels as a modified image (col. 3, lines 24-35).

For **claim 20**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, further comprising memory for saving said subsample representation of said image (col. 3, lines 24-35).

For **claim 21**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said subsample representation of selected regions of said image is determined in hardware (col. 3, lines 24-46).

Claims 22, 23, 24, 25, and 26 are method claims corresponding to method claims 5, 7, 10, and 11 respectively. Therefore, claims 22, 23, 24, 25, and 26 are analyzed and rejected as previously discussed with respect to claims 7, 8, 9, 10, and 11, respectively.

For **claim 27**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 23, wherein said changing the degree of said subsampling is determined based on a complexity of calculation for said filter (col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15).

Claims 30 –32 are apparatus claims corresponding to apparatus claims 16-18, respectively. Therefore, claims 30-32 are analyzed and rejected as previously discussed with respect to claims 16-18, respectively.

For **claim 57**, Benati teaches one or more processor-readable media having code embedded therein for programming a processor to perform a method of filtering a red eye phenomenon from a digital image comprising a multiplicity of pixels indicative of color, the method comprising determining whether one or more regions within a subsample representation of said digital image are suspected as including red eye artifact, wherein the subsample representation comprises an eye region suspected as indicative of red eye, and wherein a degree of subsampling is based on a complexity of calculation of the red-eye filter (col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15) and on an analysis of meta-data (bit map) information (figs. 2-4; col. 3, lines 46-62; col. 4, lines 17-45). However, Benati does not expressly disclose subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image.

In a similar field of endeavor, Malloy Desormeaux discloses subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image (col. 16, line 48 -- col. 17, line 35). In light of the teaching of Malloy Desormeaux, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus with subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image in order to adjust the brightness of the image (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 58**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method further comprising varying a degree of the subsample representation for each region of said one or more regions based on said image (col. 3, lines 24-45).

For **claim 59**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method further comprising generating the subsample representation based on said image (col. 4, line 51 – col. 5, line 21).

For **claim 60**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method further comprising generating the subsample presentation utilizing a hardware-implemented subsampling engine (col. 3, lines 46-62).

For **claim 61**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method further comprising testing one or more regions within said subsample representation determined as including red eye

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artifact for determining any false redeye groupings (col. 3, line 63 – col. 4, line 16; col. 4, line 51 – col. 5, line 21).

For **claim 62**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method further comprising

(c) associating said one or more regions within said subsample presentation of said image with one or more corresponding regions within said image (col. 4, line 51 – col. 5, line 21); and

(d) modifying said one or more corresponding regions within said image (col. 7, lines 8-35).

For **claim 63**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method wherein the determining comprises analyzing meta-data information including image acquisition device-specific information (col. 4, lines 17-45).

For **claim 64**, Benati, as modified by Malloy Desormeaux, teaches the one or more processor-readable media the method of claim 57, wherein the method further comprising analyzing the subsample representation of selected regions of said digitized image, and modifying an area determined to include red eye artifact (col. 3, lines 24-45).

Claims 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76 and 77 are the one or more processor-readable media claims corresponding to apparatus claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 19, 20, and 21, respectively. Therefore, claims 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76 and 77 are analyzed and rejected as previously discussed with respect to claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 19, 20, and 21, respectively.

Claims 80-82 are the one or more processor-readable media claims corresponding to apparatus claims 16-18, respectively. Therefore, claims 80-82 are analyzed and rejected as previously discussed with respect to claims 16-18, respectively.

For **claim 83**, Benati, as modified by Malloy Desormeaux, teaches the apparatus of claim 1, wherein the metadata information comprises image acquisition device-specific metadata (col. 4, lines 17-45).

For **claim 84**, Benati, as modified by Malloy Desormeaux, teaches the apparatus of claim 83, wherein the metadata information comprises digitized image metadata (col. 4, lines 17-45).

Claim 85 is a method claims corresponding to method claim 84. Therefore, claim 85 is analyzed and rejected as previously discussed with respect to claim 84.

For **claim 89**, Benati teaches the one or more processor-readable media the method of claim 57, wherein the analysis of metadata information comprises analysis of digitized image meta-data (col. 4, lines 17-45).

Claims 90-91 are the one or more processor-readable media claims each corresponding to method claim 89. Therefore, claims 90-91 are analyzed and rejected as previously discussed with respect to claim 89.

For **claim 92**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said image processing analysis is based on histogram data obtained from said pre-capture image (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 93**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said image processing analysis is based on color correlogram data obtained from said pre-capture image (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 94**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said image processing analysis is based on global luminance or white balance image data, or both, obtained from said pre- capture image (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 95**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said image processing analysis is based on face detection analysis of said pre- capture image (Benati col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15) (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

For **claim 96**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said image processing analysis is based on determining pixel regions with a color characteristic indicative of redeye (Benati col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15).

For **claim 97**, Benati, as modified by Malloy Desormeaux, discloses the apparatus of claim 1, wherein said image processing analysis is performed in hardware (Benati col. 3, lines 24-46).

Claims 98-103 are the one or more processor-readable media claims corresponding to apparatus claims 90-97. Therefore, claims 98-103 are analyzed and rejected as previously discussed with respect to claims 90-97.

For **claim 104**, Benati teaches a method of filtering a red eye phenomenon from a digital image comprising a multiplicity of pixels indicative of color, the method comprising using a processor for determining whether one or more regions within a subsample representation of said digital image are suspected as including red eye artifact, wherein the subsample representation

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comprises an eye region suspected as indicative of red eye (col. 5, lines 27-36), and wherein a degree of said subsampling is based upon a complexity of calculation of the red-eye filter (col. 4, line 51 – col. 5, line 36; col. 5, line 38 – col. 6, line 15) and on an analysis of meta-data (bit map) information (figs. 2-4; col. 3, lines 46-62; col. 4, lines 17-45). However, Benati does not expressly disclose subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image.

In a similar field of endeavor, Malloy Desormeaux teaches subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image (col. 16, line 48 -- col. 17, line 35). In light of the teaching of Malloy Desormeaux, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method with subsampling is based on data obtained from the camera relating to image processing analysis of a precapture image in order to adjust the brightness of the image (Malloy Desormeaux col. 16, line 48 -- col. 17, line 35).

5. **Claims 28 and 78** are rejected under 35 U.S.C. 103(a) as being unpatentable over Benati et al. (U.S. Pat. #5748764) in view of Malloy Desormeaux (U.S. Pat. #6,501,911) as applied to claim 5 above, and further in view of Nicponski (U.S. Pat. 5974189).

For **claim 28**, Benati teaches the apparatus of claim 1 further comprising determining said subsample representation (figs. 2-4; col. 3, lines 46-62; col. 4, lines 17-45). However, Benati does not expressly teach determining said subsample representation using spline interpolation.

In a similar field of endeavor, Nicponski teaches determining said subsample representation using spline interpolation (col. 7, lines 27-31). In light of the teaching of Nicponski, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method using spline interpolation in order to enable improved enhancement effects on the image such as shadows, glows, etc. (Nicponski, Abstract).

Claim 78 is the one or more processor-readable media claim corresponding to apparatus claim 28. Therefore, claim 78 is analyzed and rejected as previously discussed with respect to claim 28.

6. **Claims 29 and 79** are rejected under 35 U.S.C. 103(a) as being unpatentable over Benati et al. (U.S. Pat. #5748764) in view of Malloy Desormeaux (U.S. Pat. #6,501,911) as applied to claim 5 above, and further in view of Naqvi et al. (U.S. Pat. #5847714).

For **claim 29**, Benati teaches the apparatus of claim 1, further comprising determining said subsample representation (figs. 2-4; col. 3, lines 46-62; col. 4, lines 17-45). However, Benati does not expressly teach determining said subsample representation using bi-cubic interpolation.

In a similar field of endeavor, Naqvi teaches determining said subsample representation using bi-cubic interpolation (col. 5, lines 4-6). In light of the teaching of Naqvi, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method using bi-cubic interpolation in order to enable improved magnified destination image (Naqvi, col. 2, lines 3-5).

Claim 79 is the one or more processor-readable media claim corresponding to apparatus claim 29. Therefore, claim 79 is analyzed and rejected as previously discussed with respect to claim 29.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carramah J. Quiett whose telephone number is (571)272-7316. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David L. Ometz/
Supervisory Patent Examiner, Art Unit
2622

/C. J. Q./
Examiner, Art Unit 2622
May 5, 2009